

Abstract

A hands-free towel dispenser comprising a housing with a roll of towels inside an interior, a sensor for detecting the presence of an object and generating a signal, a motor driving a dispensing means for dispensing a desired length of towel, a control 5 circuit for receiving the signal from the sensing means and controlling supply of power to the motor driving the dispensing mechanism, and a battery. The control circuit is adapted to sample back EMF generated by the motor while the dispensing means is dispensing the towel and to determine based on the sampled back EMF a calculated run time for the operation of the motor to dispense the desired length of towel. A method of dispensing a 10 desired length of towel wherein a sensor generates a signal when the presence of an object is sensed. A control circuit receives the signal from the sensor and supplies power from a battery to a motor to drive a dispensing means to dispense a desired length of towel from the roll. The control circuit determines the speed of operation of the motor driving the dispensing means by using back EMF signals generated by the motor. The 15 control circuit calculates a calculated run time the motor should drive the dispensing means to dispense the desired length of towel based on the speed of operation of the motor as determined from the back EMF signals generated by the motor. The control circuit stops the supply of power to the motor when the motor has run for the calculated run time.